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Cristian M. Neculescu

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PATENT GROUP GA030-43
GEORGIA-PACIFIC LLC
133 PEACHTREE STREET, N.E.
ATLANTA, GA 30303-1847

EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT

PAPER NUMBER

1791

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/815,791	Applicant(s) NECULESCU ET AL.	
	Examiner JEFFREY WOLLSCHLAGER	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 87-95 and 100-118 is/are pending in the application.
- 4a) Of the above claim(s) 87-95 and 109 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 100-108 and 110-118 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/8/08</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1791

DETAILED ACTION

Response to Amendment

Applicant's amendment to the claims filed August 15, 2008 has been entered. Claims 100, 104-106, 108, 110, 111 are currently amended. Claims 87-95 and 109 remain withdrawn from further consideration. Claims 1-86 and 96-99 have been canceled. Claims 100-108 and 110-118 are under examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 100-108 and 110-118 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 108 and 110, the limiting effect of "using only one mold" is unclear. The examiner notes that claim 108 recites "on said at least one side not contacted with said mold". However, there is insufficient antecedent basis for this limitation in the claim. Further, claim 110 does not include this same limitation, but is argued together with the rejection of claim 108, suggesting the same intended scope for this limitation. The examiner notes that the limitation "wherein said mold is in contact with a first side of said extruded sheet" set forth in claims 108 and 110 does not make it clear that the mold is only in contact with one side of the extruded sheet as suggested/implied in the arguments. The examiner notes that the recitation "only one mold" does not make it clear whether only a one piece female or a male mold may be employed, as suggested/implied in the arguments. Finally, the examiner notes that the mere fact that a reference employs a mold having more than one piece (e.g. a male portion and a female portion) does not mean that it is not "one mold". Such a

Art Unit: 1791

mold is quite reasonably interpreted to be "one mold" having more than one piece. The examiner submits the claims would need to be amended to clarify the intended scope. Claims 100-107 and 111-118 are rejected as dependent claims. For the purposes of examination, the examiner understands that the intent of amended claims 108 and 110 in view of the arguments and the amendment is to exclude "matched die" thermoforming molds (e.g. see amended claims 100 and 111).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 100, 101, 108, and 110-112 are rejected under 35 U.S.C. 103(a) as being obvious over Rosen (US 5,423,160) in view of either of Kato et al. (US 5,198,175) or Boardman (US 4,244,915).

Regarding claims 108 and 110, Rosen teach a method of producing a sterile shaped container comprising extruding a web/sheet (Abstract; col. 2, lines 7-26) of propylene

Art Unit: 1791

homopolymer or ethylene/propylene copolymer (col. 2, lines 26-35) and a filler such as mica (col. 2, lines 35-43). The sheet/web is thermoformed at a temperature of about 190 °C/374 °F (col. 2, lines 15). Rosen also teaches that thermoforming the material within the range of 110 °C - 160 °C (230-320 °F) is conventional in the art (col. 1, lines 12-52). Rosen teach that the hot web/sheet is sucked or drawn into the evacuated cavities into abutment against the walls of the cavity during the thermoforming operation (col. 3, lines 1-27). Rosen do not clearly teach only one side of the mold contacts the extruded sheet. However, Kato et al. teach a method of producing a container wherein a plug and a mold are employed (Abstract; Figures 1-3) and Boardman teaches a method of producing containers wherein a plug assisted pressure and/or vacuum forming station are employed (Abstract: Figures 3-7).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Rosen and to have employed the thermoforming techniques set forth by either of Kato et al. or Boardman, for the purpose, as suggested by Kato et al., of producing a container with a more uniform thickness distribution and without a drag line in its sidewall (Abstract), or for the purpose, as suggested by Boardman, of thermoforming sheets into containers at very high speeds (col. 1, lines 52-57; col. 2, lines 5-14).

As to the limitation directed to the micronodular surface, the examiner submits that as set forth in the original disclosure (paragraphs [0052, 0053, and 0084] of PG PUB 2004/0185200) thermoforming a polymeric sheet having mica as claimed intrinsically yields a product having a "micronodular surface". As such, when the combination teaches thermoforming the same claimed materials in the same claimed manner, a micronodular surface is necessarily formed. Further, the examiner notes that Rosen specifically makes mention of

Art Unit: 1791

mica in a relatively short list of five materials deemed by Rosen to be worthy of mention by name.

As to claims 100 and 111, Rosen employs vacuum to thermoform the article (col. 3, lines 1-27) and each of Kato et al. and Boardman also disclose utilizing vacuum and plug assist.

As to claims 101 and 112, Rosen vacuum forms the article in a mold (col. 3, lines 1-27) and each of Boardman and Kato vacuum form.

Claims 100-108 and 110-118 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (US 5,439,628) in view of Mitsuno et al. (EP 0 243 206) and Watkins et al. (US 5,514,315).

Regarding claims 108 and 110, Huang teaches the basic claimed process comprising thermoforming (col. 8, lines 1-5) a filled polypropylene sheet to produce a container wherein the container has a rough/coarse surface because of the filler particles effusing from the surface (col. 7, line 35- col. 8, line 5 and col. 6, lines 25-30). The filled sheet is extruded and calendered prior to the additional processing step of forming the articles, such as forming containers by thermoforming (col. 8, lines 53-62). Huang discloses mica as a suitable filler in a relatively short list of fillers, but only exemplifies talc or calcium carbonate (col. 6, lines 24-45).

However, Mitsuno et al. disclose a polypropylene (page 3, lines 7-10) filled composition which provides improved properties (page 2, lines 48-51) wherein talc and/or mica alone or together are the employed fillers (page 3, lines 54-61) and the composition is used in various molding applications (col. 4, lines 52-55). Further, Mitsuno et al. appear to show their best physical property results, such as heat deformation temperature and adhesive strength, when employing mica and talc together (examples 19-22; Table 5).

Art Unit: 1791

Additionally, Huang does not disclose the temperature at which thermoforming is performed or the type of mold employed. However, Watkins et al. disclose vacuum thermoforming a polypropylene sheet with only one mold surface contacting the sheet at about 340 °F (col. 3, lines 12-15).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed mica as a filler in the method disclosed by Huang, as suggested by Mitsuno, for the purpose of producing a desired product with improved physical properties. It is further noted that Mitsuno et al., in addition to Huang, suggest that mica and talc are equivalent fillers suitable for the same purpose.

Further, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have optimized the thermoforming temperature to a temperature between the glass transition temperature and the melting point as is implicit in the term “thermoform” itself and as is demonstrated by Watkins et al. in their polypropylene thermoforming processes.

Finally, the examiner notes that the combination does not expressly teach the container has all the same claimed physical properties and effects. However, the combination teaches all claimed process steps, and employs all the claimed materials in the same claimed manner. As such, the claimed physical properties and effects are necessarily realized.

As to claims 100, 101, 111 and 112, Huang discloses thermoforming (col. 8, lines 1-5) in general and Watkins et al. disclose a female vacuum forming method (Figure 3; col. 3, lines 14-49).

As to claims 102-107 and 113-118, Huang employs pre-blended/admixed titanium dioxide (Example 1) and polyvinylidene fluoride processing aids (col. 7, lines 1-22).

Art Unit: 1791

Additionally, Huang teaches silanes are suitable for high level of filler loading to improve dispersion and compatibility (col. 6, lines 43-45).

Claims 102-107 and 113-118 are rejected under 35 U.S.C. 103(a) as being obvious over Rosen (US 5,423,160) in view of either of Kato et al. (US 5,198,175) or Boardman (US 4,244,915), as applied to claims 100, 101, 108 and 110-112 above, and further in view of Huang (US 5,439,628).

As to claims 102-107 and 113-118, the combination teaches the method set forth above. Rosen does not teach employment of the claimed additives. However, Huang teaches that in the art of forming filled polypropylene articles suitable for thermoforming a variety of additives are routinely employed (col. 4, lines 33-37). These additives include titanium dioxide (Example 1), polyvinylidene fluoride processing aids (col. 7, lines 1-22), antistatic agents (Table 1), and silane coatings (col. 6, lines 43-45).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the teaching of Rosen and to have employed conventional additives such as those disclosed by Huang for the purpose of improving and controlling the processability, appearance (e.g. color), and properties of the article to be produced, as is routinely practiced in the art.

Claims 100-103, 105-108, 110-114 and 116-118 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui et al. (US 5,100,930) in view of Simon (US 5,300,747) and Rosen (US 5,423,160), and in view of either of Kato et al. (US 5,198,175) or Boardman (US 4,244,915).

Art Unit: 1791

Regarding claims 108 and 110, Fukui et al. teach a method of producing a food container having a low level of offensive odor that is suitable for use in microwave ovens (Abstract; col. 1, lines 10-32). Fukui et al. employ a polyolefin based resin such as polypropylene (col. 2, lines 50-60) and an inorganic filler, of which, mica is preferable (col. 3, lines 1-3). Fukui et al. do state that talc is most desirable. Fukui et al. extrude a sheet of the material and subsequently thermoform it into the desired container (col. 6, lines 3-16). Fukui et al. do not teach the claimed thermoforming temperature or that only one mold is employed.

However, Simon teach a method of forming a microwave heating container wherein mica is added due to its dielectric abilities (col. 2, lines 45-60) and Rosen teaches that thermoforming polyolefin based sheets, such as polypropylene, for food containers is conventionally performed within the range of 110 °C - 160 °C (230-320 °F) and discloses a method allowing for thermoforming at temperatures of about 190 °C (374 °F). Additionally, However, Kato et al. teach a method of producing a container wherein a plug and a mold are employed (Abstract; Figures 1-3) and Boardman teaches a method of producing containers wherein a plug assisted pressure and/or vacuum forming station are employed (Abstract: Figures 3-7).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Fukui et al. and to have thermoformed the sheet at the temperatures disclosed by Rosen and to have specifically employed mica as the filler, as suggested by Simon, for the purpose of effectively thermoforming the food container while imparting additional properties suitable for utilizing the container in a microwave oven. As to the claimed micronodular surface, the examiner submits the combination employs the same claimed materials in the same claimed manner. As such, the same claimed effects and physical properties would be realized by the practice of the combined method. Additionally, it would have been *prima facie* obvious to one having ordinary

Art Unit: 1791

skill in the art at the time of the claimed invention to have modified the method of Fukui et al. and to have employed the thermoforming techniques set forth by either of Kato et al. or Boardman, for the purpose as suggested by Kato et al. of producing a container with a more uniform thickness distribution and without a drag line in its sidewall (Abstract), or for the purpose, as suggested by Boardman, for thermoforming sheets into containers at very high speeds (col. 1, lines 52-57; col. 2, lines 5-14).

As to claims 100, 101, 111 and 112, Fukui et al. generally disclose thermoforming. Additionally, Rosen (col. 3, lines 7-27), Kato, and Boardman provide specifics of a vacuum thermoforming process

As to claims 102, 103, 105-107, 113, 114 and 116-118, Fukui et al. employ various additives such as antistatic agents (Abstract); waxy slip agents (col. 4, lines 33-39), and titania/titanium dioxide pigments (col. 5, lines 62-66).

Claims 104 and 115 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui et al. (US 5,100,930) in view of Simon (US 5,300,747) and Rosen (US 5,423,160), and either of Kato et al. (US 5,198,175) or Boardman (US 4,244,915), as applied to claims 100-103, 105-108, 110-114 and 116-118 above, and further in view of Reinforcements (nonfibrous); Modern Plastics, July 1979, pages 45-46, previously of record.

As to claims 104 and 115, the combination teaches the method set forth above. Fukui et al. do not teach employment of a silane coupling agent. However, Reinforcements teaches that silane reinforcement agents increase strength, stiffness and heat distortion in resin reinforced articles (paragraphs 4 and 5, page 45).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Fukui et al. and to have

Art Unit: 1791

employed a silane coupling agent as suggested by Reinforcements for the purpose of increasing strength and resistance to heat distortion (paragraphs 4 and 5, page 45)

Response to Arguments

Applicant's arguments filed August 15, 2008 directed to the newly added "one mold" limitation and the teaching of Rosen and Fukui have been fully considered, but are moot in view of the new grounds of rejection necessitated by the amendment. Further, applicant's arguments directed to the examiner's position that thermoforming the same claimed material in the same claimed manner results in the same claimed surface have been fully considered, but they are not persuasive. The examiner notes that the instant specification (e.g. paragraphs [0052, 0053, and 0084] of PGPUB 2004/0185200) and claims 100 and 111 prior to the instant amendment suggest that thermoforming with a variety of conventional thermoforming techniques, including matched die, is adequate to produce the micronodular surface. The examiner submits that the instant specification does not appear to regard the specific technique of thermoforming as yielding the suggested new or unexpected result, but that thermoforming the claimed composition is what yields the claimed effect (i.e. micronodular). Further, the examiner notes that the fact that applicant may have recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Further still, while not relying on this interpretation, the examiner notes that the description set forth in Rosen regarding the thermoforming technique appears to be quite reasonably interpreted as a plug assist method and is not necessarily a "matched die" technique

Art Unit: 1791

as set forth in the arguments. The examiner submits that that thermoforming the composition set forth by Huang and Mitsuno and Watkins yields the claimed surface effects. Applicant's arguments against the Watkins reference individually can not overcome the rejection based on a combination of references. The examiner submits that the rejections set forth above make out a *prima facie* case. Accordingly, in view of the 112 second paragraph rejection and the prior art rejections set forth above, the examiner submits the claims would need to be amended to overcome the rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY WOLLSCHLAGER whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

Art Unit: 1791

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. W./

Examiner, Art Unit 1791

November 5, 2008

/Monica A Huson/

Primary Examiner, Art Unit 1791